1. Record Nr. UNINA9910254630803321

Autore	De Sanctis Enzo
Titolo	Energy from Nuclear Fission : An Introduction / / by Enzo De Sanctis, Stefano Monti, Marco Ripani
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-30651-0
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XV, 278 p. 55 illus.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	333.7924
Soggetti	Nuclear energy Nuclear physics Heavy ions Energy systems Nuclear Energy Nuclear Physics, Heavy Ions, Hadrons Energy Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Part I. Nuclear Physics and Radioactivity -- 1. The Building Blocks of Matter -- 2. Radioactivity and Penetrating Power of Nuclear Radiation -- 3. Nuclear Reactions and Fission -- Part II. Nuclear Energy from Nuclear Fission -- 4. Nuclear Reactors -- 5. Nuclear Safety and Radiation Protection -- 6. Management of Radioactive Waste -- Glossary.
Sommario/riassunto	This book provides an overview on nuclear physics and energy production from nuclear fission. It serves as a readable and reliable source of information for anyone who wants to have a well-balanced opinion about exploitation of nuclear fission in power plants. The text is divided into two parts; the first covers the basics of nuclear forces and properties of nuclei, nuclear collisions, nuclear stability, radioactivity, and provides a detailed discussion of nuclear fission and relevant topics in its application to energy production. The second part covers the basic technical aspects of nuclear fission reactors, nuclear fuel cycle and resources, safety, safeguards, and radioactive waste

management. The book also contains a discussion of the biological effects of nuclear radiation and of radiation protection, and a summary of the ten most relevant nuclear accidents. The book is suitable for undergraduates in physics, nuclear engineering and other science subjects. However, the mathematics is kept at a level that can be easily followed by wider circles of readers. The addition of solved problems, strategically placed throughout the text, and the collections of problems at the end of the chapters allow readers to appreciate the quantitative aspects of various phenomena and processes. Many illustrations and graphs effectively supplement the text and help visualising specific points.

2. Record Nr. UNINA9910877594403321

Autore	Koch Walter
Titolo	Pathway Design for Industrial Fermentation
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2024 ©2024
ISBN	9783527843930 3527843930 9783527843954 3527843957
Edizione	[1st ed.]
Descrizione fisica	1 online resource (498 pages)
Disciplina	660.28449
Soggetti	Fermentation Industrial microbiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Introduction -- Chapter 1 Methane -- 1.1 Application -- 1.2 Conventional Production of Methane -- 1.3 Carbon Dioxide as Feedstock -- 1.4 Conversion of Carbon Dioxide into Methane -- 1.4.1 The Chemical Sabatier -- 1.4.2 The Biochemical Sabatier -- 1.5 Biochemical Pathway Design -- 1.6 Integration of Hydrogen

Production and the Biochemical Methanation -- 1.6.1 Conversion of Carbon Dioxide into Methane with Integrated Production of Hydrogen -- 1.6.2 Mechanisms at the Cathode for the Uptake of Reduction Equivalents -- 1.6.3 R&D with Integrated Hydrogen Production and Biochemical Methanation and IET -- 1.6.4 Boundary Conditions for Potential Commercial Application -- 1.7 Process Development for the “Biochemical Sabatier” without Integrated Water Electrolysis -- 1.8 Commercial Application of Fermentative Methane Production -- References -- Chapter 2 Ethanol Ex Glucose -- 2.1 Application -- 2.2 Production of Ethanol -- 2.3 Pathway Design -- 2.3.1 Glycolysis as Natural Fermentation Pathway -- 2.3.2 S. cerevisiae as Fermentation Host -- 2.3.3 Generation of Carbon Dioxide as By Product -- 2.3.4 Zymomonas mobilis as Fermentation Host

Sommario/riassunto

This book, authored by Dr. Walter Koch, explores industrial fermentation processes and their applications in producing chemicals and fuels. It delves into the design of metabolic pathways for various compounds, such as methane, ethanol, lactic acid, and others, using microorganisms like E. coli and Saccharomyces cerevisiae. The text covers advancements in molecular biology, enzyme optimization, and metabolic engineering, aiming to enhance production efficiency and reduce carbon footprints. It addresses the challenges of raw material extraction and the potential of fermentation technology in industrial applications. The book is intended for professionals and researchers in biotechnology, chemical engineering, and related fields.